

Professor in Photonic Technologies for Ultra-high-speed Communications

DTU Fotonik, the Department of Photonics Engineering, at the Technical University of Denmark invites applications for a position as Professor in Ultra-high-speed Photonic Communication Technologies.

DTU Fotonik is the department of light science and technology, whose research activities cover a unique spectrum of core areas within communications, devices, sensors, optics and material research. The Professor will be affiliated with the Communication Technology Cluster, which is one of four thematic clusters in the Department.

Responsibilities and tasks

The Department wishes to attract a visionary researcher, who is able to maintain and further develop the department's position as a leading player on a global scale in the area of optical communications and especially in the area of ultra-high-speed photonic communication technologies. The applicant is expected to attract considerable research funding from prestigious sources, and to be active in international networking with researchers from other high ranking institutions and industry in order to maintain the Department's position as a hub for international exchange of ideas and visions. A major research area for the professor will be studies of nonlinear optical signal processing using various materials for energy-efficient communication systems.

The candidate is expected to be able to work with other research groups worldwide and at DTU, including groups within the Department. Especially relevant partners would be research groups working with nanophotonic devices, silicon photonics, advanced and spectrally efficient data formats, exotic materials such as chalcogenide glass, systems for supercomputers and state-of-the-art telecommunication systems.

The successful candidate is expected to take a lead position in teaching at the bachelor-, master- and PhD levels.

Qualifications

The applicant must have in-depth experience with optical signal processing, and in particular with silicon photonics for ultra-fast nonlinear switching and in general with optical signal processing using various materials such as chalcogenide waveguides, highly nonlinear fibres, periodically poled lithium niobate and III-V semiconductors. The applicant must have in-depth experience with optical time lenses and their usage for e.g. energy-efficient optical switching such as time-to-frequency conversion, or spectral telescopes for spectral magnification of spectrally-efficient data signals, or frequency-to-time conversion for simultaneous optical processing of wavelength multiplexed data channels. In addition, the applicant must have in-depth experience with all-optical regeneration and optical packet switching for Tbit/s Ethernet systems, as well as in-depth experience with Tbit/s serial data signals and their control in e.g. silicon nanowires.

The applicant must have a solid international network with researchers from other high ranking institutions and industry in order to maintain the Department's position as a hub for international exchange of ideas and visions.

As scientific and other forms of dissemination is an important part of the position, good communication skills are required, and the applicant is expected to have considerable experience with communicating through scientific channels, i.e. to have a strong publication list, as well as experience in communicating through popular media.

Applicants must demonstrate their ability to bring research to innovation through involvement in patenting of innovative ideas and inventions based on their research.

Assessment

In the assessment of the candidates consideration will be given to

- the ability to teach
- scientific production at international level, research potential and ability to lead and develop a research team
- the ability to promote and utilize research results
- experience with innovation activities
- an all-round experience basis, including international experience
- the ability to contribute to the development of the Department's internal and external cooperation
- track record in attracting funding to the research area
- visions within the research area

Salary and terms of employment

The appointment will be based on the collective agreement with the Confederation of Professional Associations. The allowance will be agreed with the relevant union.

Further information

Further information may be obtained from Head of Department Lars-Ulrik Aaen Andersen, tel.: +45 4525 3816.

You can read more about DTU Fotonik on www.fotonik.dtu.dk

Application procedure

Please submit your online application no later than **XXX 2013**. Apply online at www.career.dtu.dk. Applications must be submitted as **one pdf file**, containing all materials to be given consideration. To apply, please open the link "Apply online," fill in the online application form, and attach **all your materials in English in one pdf file**. The file must include:

- Application (cover letter) addressed to the President
- CV
- List of publications indicating scientific highlights
- Documentation of teaching experience
- A plan for future research

All interested candidates irrespective of age, gender, disability, race, religion or ethnic background are encouraged to apply.

DTU is a technical university providing internationally leading research, education, innovation and public service. Our staff of 5,000 advance science and technology to create innovative solutions that meet the demands of society; and our 9,000 students are educated to address the technological challenges of the future. DTU is an independent academic university collaborating globally with business, industry, government, and public agencies.